



PATENT #4

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: NEAL et al.

Attorney Docket No.: DEM1P001

Application No.: 09/741,958

Examiner: UNASSIGNED

Filed: December 20, 2000

Group: 2161

Title: PRICE OPTIMIZATION SYSTEM

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Commissioner for Patents, Washington, D.C. 20231 on April 23, 2001.

Signed: \_\_\_\_\_

Sue Funchess

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination of the above case, please enter the following amendments to the above-identified patent application as follows:

**In the Claims:**

Please add claims 6-13 as follows. All pending claims have been reproduced below for the convenience of the Examiner.

1. An apparatus for computing a preferred set of prices for a plurality of products, comprising:

an econometric engine for modeling sales as a function of price to create a sales model;

a financial model engine for modeling costs to create a cost model; and

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices.

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2. The apparatus, as recited in claim 1, wherein the optimization engine comprises:

a rule tool, which stores a plurality of rule parameters; and  
a price calculator connected to the rule tool, the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on rule parameters, the sales model, and the cost model.

3. The apparatus, as recited in claim 2, further comprising a support tool connected to the optimization engine wherein the support tool receives the preferred set of prices from the optimization engine and provides a user interface to a client, wherein the user interface provides the preferred set of prices to the client.

4. A method for determining a preferred set of prices for a plurality of products, comprising:  
creating a sales model;  
creating a cost model; and  
generating the preferred set of prices for the plurality of products based on the sales model and cost model.

5. The method, as recited in claim 4, wherein the creating of the sales model comprises:  
creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two products;  
creating a sales model for each demand group; and  
creating a market share model for each product in each demand group.

6. (New) An apparatus for computing a preferred set of prices for a plurality of products, comprising:

an econometric engine for modeling sales as a function of price to create a sales model based on Bayesian modeling;

a financial model engine for modeling costs to create a cost model; and

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an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices.

7. (New) The apparatus of claim 6 wherein the Bayesian model is a Bayesian Shrinkage model.

8. (New) The apparatus of claim 7 where the Bayesian Shrinkage model is a multi-stage model.

9. (New) The apparatus of claim 6 wherein the econometric engine provides demand coefficients to the optimization engine, the demand coefficients used for estimating demand given market conditions.

10. (New) The apparatus of claim 8 wherein the market conditions include a price point.

11. (New) The apparatus of claim 6 wherein the econometric engine divides the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group.

12. (New) The apparatus of claim 11 wherein the econometric engine generates a market share model for said products in said demand groups.

13. (New) The apparatus of claim 12, wherein the econometric engine determines a sales model for each demand group so that the optimization engine is able to calculate demand for said products by multiplying the market share model for said products with the sales model for the demand group to which the product belongs.

## REMARKS

Claim 6 has been added. Claim 6 has the same as claim 1 with the added limitation that the sales model is based on Bayesian modeling. Bayesian modeling is discussed on page 60, line 19, of the application. The additional limitation of claim 7 discussing Bayesian modeling as "Bayesian Shrinkage" Modeling is discussed on page 60, line 19, of the application. The additional limitation of claim 8 that the Bayesian Shrinkage model is a multi-stage model is shown on page 63, line 11, and page 69, line 4, indicating that the modeling is done in two stages. The additional limitation of claim 9 that the econometric engine provides demand coefficients to the optimization engine and that the demand coefficients are used for estimating demand given market conditions is discussed in the application on page 9, line 21, and page 10, lines 2-3. The additional limitation of claim 10 that the market conditions include a price point is described in the application on page 10, lines 1-2. The additional limitation of claim 11 that the econometric engine divides the plurality of products into a plurality of demand groups, where at least one of the demand groups has at least two products in the at least one demand group is disclosed in claim 5 and on page 13, lines 14-17. The additional limitation of claim 12 that the econometric engine generates a market share model for each of the products in the demand groups is discussed in the application on page 70, lines 1-5. The additional limitation of claim 13 that the econometric engine determines a sales model for each demand group so that the optimization engine is able to calculate demand for said products by multiplying the market share model for said products with the sales model for the demand group to which the product belongs is discussed in the application on page 60, lines 5-13.

Respectfully submitted,

BEYER WEAVER & THOMAS, LLP



Michael Lee  
Registration No. 31,846

P.O. Box 778  
Berkeley, CA 94704-0778  
Telephone: (831) 655-2300